CLAIMS

1. (Amended) In an electronic cam schemed rotary cutter control method to be driven by a servo motor and position-controlled by different position patterns based on an electronic cam curve during long cutting and during short cutting, the electronic cam schemed rotary cutter control method characterized in that:

position control is carried out at all times in every region on the basis of an electronic cam curve wherein the electronic cam curve in a cubic function is used as a position command for a non-cutting section thereby realizing control extremely reduced in positional deviation in entire region including during cutting.

2. (Amended) In an electronic cam schemed rotary cutter control method to be position controlled by different position patterns based on an electronic cam curve during long cutting and during short cutting and during short cutting a line-velocity is reduction-controlled, the electronic cam schemed rotary cutter control method characterized in that:

position control is carried out at all times in every region on the basis of an electronic cam curve wherein the electronic cam curve in a cubic function as a position command for a non-cutting section with a resulting velocity in a quadratic function is used to decrease a torque effective value of a cutter servo motor and eliminates the necessity of reducing the line velocity down to a shorter size than the conventional, thereby making possible cutting by keeping a line velocity of 100%.

3. (Amended) An electric cam schemed rotary cutter control metho as claimed in claim 1 or 2, wherein as a result of a spiral edge cam curve diagram a velocity pattern, in a cutting section, is the same a the line velocity but, in non-cutting section, rises to form an upward-convex quadratic curve during short cutting and decreases in a downward-convex quadratic curve during long cutting, wherein the velocity pattern of a straight edge is in a different pattern that th velocity in the cutting section only is proportional to $1/\cos\theta$ (θ representing an angle of the edge from the immediately below during cutting) as compared to the velocity pattern of the spiral edge.

4. (Amended) An electronic cam curve generating method, characterized in that after a work is done of sealing or cutting in tune with a work-piece in a particular phase section in one cycle of rotary mechanism as with a horizontal seal mechanism of a continuous vertical wrapping machine to be driven by a servo motor or rotary cutter for cutting a work-piece to a constant length, position contro is performed using a cubic function for a position command by a continuous correlation control scheme including a prediction up to a next-cycle work start and a quadratic function obtained by differentiating a position command formula for velocity feed forward, whereby a bag length or cut length of the work-piece is automatically corresponded to regardless of an extent of a circumferential length per M (M=1. 2. ..., seal surface count or edge count) thereby obtaining an optimal electronic cam curve having a positional deviation extremely reduced in an entire section including during cutting.

5. (Amended) An electronic cam curve generating method as claime in claim 4, wherein provided that a rotation velocity of a horizontal seal mechanism or cutting tool in a seal section or cutting section i n^2, a position of rotation is y2, a line velocity at a start point is N_1, a position of rotation at a cutting start point is Y1, a time of a cutting start point is t_3 and one cycle time is Tc, then

$n_2 = N_1$ (rpm)

$y_2 = (1/M - Y_1) / (Tc - t_3) \times (t - Tc) + 1/M$ (rev);

a curve formula for the non-seal section or non-cutting section being given by a cubic function having four coefficients satisfying four boundary conditions of velocities V_1, V_2 at times T1, T2 and positions X_1, X_2, and a position and a velocity v the position is differentiated are expressed as

$x = At^3 + Bt^2 + Ct + D$ (rev)

$v = 3At^2 + 2Bt + C$ (rps);

the foregoing (T_1, X_1), (T_2, X_2) being substituted for Formula x and the foregoing (T_1, X_1), (T_2, X_2) being substituted for Formula v, i solve A, B, C and D, while $T_1 = 0$, $T_2 = t_3$, $X_1 = 0$, $X_2 = Y_1$, $V_1 = N_1/60$ and $V_2 = N_1/60$ are substituted to solve A, B, C and D; whereby

a cam curve formula having a rotation velocity in the non-seal section or non-cutting section = n_1, a rotation position y_1, a rotatic velocity in the seal section or cutting section = n2 and a rotation position = y_2 being obtained as

$n_1 = 60\ (3At2 + 2Bt + C)$ (rpm)

$n2 = N1$ (const.) (rpm)

$y1 = At3 + Bt2 + Ct + D$ (rev)

$$y_2 = (1/M - Y_1) / (Tc - t_3) \times (t - Tc) + 1/M \quad \text{(rev)},$$

whereby a non-cut-section position instruction formula and a velocity feed forward formula being obtained by merely providing four boundary conditions of a cutter edge position and velocity at a time of cut completion and a cutter edge position and velocity at a next time of cut start.